

Descriptions of Five New Trichoptera

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The five new species described in this paper represent very interesting additions to the trichopterous fauna of the United States. The new *Anagapetus* represents the fifth species in this typically western genus. Two new species of *Polycentropus* are described, one from North Dakota and one from California. One new *Lepidostoma* is added to the rich western fauna of that genus. The peculiar limnephilid genus *Cryptochia* is rarely collected and is known only from three western species; a fourth species, from California, is described herein. In many respects this new *Cryptochia* presents interesting departures from the previously described species.

Unless stated otherwise, types of the new species are in the collection of the author.

Anagapetus aisha Denning, new species

This species is closest to *A. chandleri* Ross; it differs from that species in lacking the lateral projection of the ninth tergite, and the apex of the clasper having no ventral process.

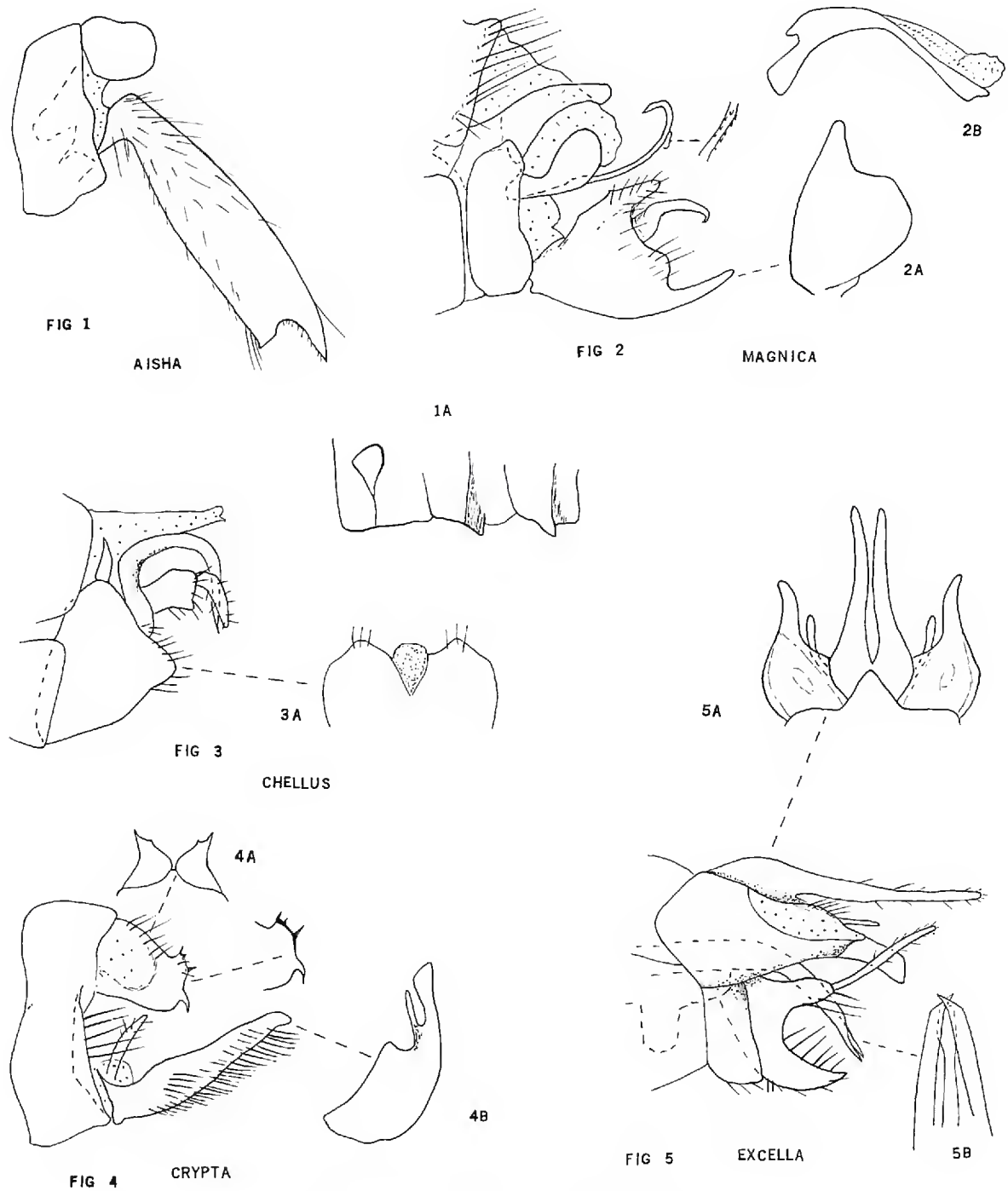
MALE.—Length 7 mm. Wings uniformly dark brown, no pattern, pubescence sparse. Head, thorax, abdomen brown, appendages flavous, antenna (broken) about same color as thorax. Fifth, sixth, and seventh sternites all transversed by a dark sclerotized band; fifth sternite with a lateral semicircular protrusion joined to each by the transverse band; sixth sternite with a mesal process, prominent and triangular; seventh sternite bearing a prominent mesal process, truncate from caudal view and conical from lateral aspect (Fig. 1A).

Genitalia as in Fig. 1. Tenth tergite divided into a pair of lateral lobes, broadly rounded, no projections, setation very sparse. Claspers greatly elongated, flat, wide, and slightly concave, abruptly curved ventrocaudad; apex with an acuminate dorsal lobe and an extremely short truncate ventral projection; except for basal half, setation sparse, along dorsal margin a dense mass of dark brown minute setae are located. Aedeagus small, hidden within ninth segment.

Holotype male.—KINGS CANYON NATIONAL PARK, FRESNO COUNTY, CALIFORNIA, elevation 6,400 feet, 4 June 1963, C. P. Alexander.

Polycentropus magnica Denning, new species

This new *Polycentropus* is the largest species described from North America. Although distinctive, its relationship to other described species has not been determined, it would appear to be unique among our known polycentropids.



EXPLANATION OF FIGURES

Figs. 1-5. 1, *Anagapetus aisha*, lateral aspect; 1A, fifth, sixth, seventh sternites, lateral aspect. 2, *Polycentropus magnica*, lateral aspect; 2A, clasper, ventral aspect; 2B, aedeagus, lateral aspect. 3, *Polycentropus chellus*, lateral aspect, 3A, fused claspers, ventral aspect. 4, *Lepidostoma crypta*, lateral aspect; 4A, tenth tergite, dorsal aspect; 4B, clasper, ventral aspect. 5, *Cryptochia excella*, lateral aspect; 5A, ninth and tenth tergite, dorsal aspect; 5B, aedeagus and aedeagus blades, ventral aspect.

MALE.—Length 15 mm. Color of wings uniformly light brown except for a few scattered white areas in the forewing, dark brown pubescence fairly abundant. Head and thorax varying shades of dark brown and yellow. Antennae yellowish, segments outlined with black. Legs and spurs yellow, pubescence dark brown. Fifth sternite with a circular glabrous area, arising from mesal surface near center

is an elongate membranous sac whose function is unknown; this peculiar development has not been described previously.

Genitalia as in Fig. 2. Ninth sternite elongate, narrow, articulated to ninth tergite which extends dorsocaudad, narrowed distally to an ovate apex, lateral portion flared outward, concave beneath. Tenth tergite membranous, irregular in outline. Cerci narrowed basally, distal portion orbiculate, from the ventral corner arise a pair of prominent filamentous processes, divergent from base to apex, distal half armed with rows of spicules. Claspers large, mesal surface concave; dorsal angle thumb-like, the ventral corner elongated and curved slightly dorsad; distal margin near dorsal lobe gives rise to an acuminate process curved mesad. From ventral aspect (Fig. 2A), ventral margin of claspers slightly divergent, ventral lobe large, gradually narrowed to an obtuse apex. Aedeagus long, slender, arcuate; ventral sclerotized portion trough-like, from caudal view apex quadrate; a large membranous lobe occupies distal portion, Fig. 2B.

Holotype male.—YOSEMITE NATIONAL PARK, FRESNO COUNTY, CALIFORNIA, 8 September 1963, D. G. Denning.

***Polycentropus chellus* Denning, new species**

This species is related to the *interruptus-flavus* group, it differs from each in the broadly triangular claspers and their ventrally fused condition, by the short, curved tenth tergite and the digitate apical segment of the clasper.

MALE.—Length 8 mm. Wings fuscous, pubescence causing indistinct markings near apex; head, thorax, abdomen dark brown; appendages and antennae brown. Fourth sternite bears a broad flat process arising from dorsocephalad corner which gradually tapers to a caudad-curved apex, and extends to the dorsal margin of fourth tergite.

Genitalia as in Fig. 3. Ninth tergum membranous, extended caudad about as far as cercus. Filaments of tenth tergite arched ventrad, long, acuminate, the acute apex reaching ventrad slightly beyond cercus. Cercus with basal segment gradually widened distally, distal margin truncate; apical segment digitate, curved ventrad. Claspers occupy most of capsule, broadly triangular from lateral aspect; arising from dorsal angle and associated with the base of the ninth tergum is a pair of long, narrow acute sclerites. It is not clear if this sclerite is a part of the ninth tergum or an extension of the clasper. From ventral aspect (Fig. 3A), the claspers are fused along meson, fusion discernible by a darkly sclerotized line; between apices arise a short truncate process which is probably all that remains of the eighth sternum.

Holotype male.—FARGO, NORTH DAKOTA, light trap, 1 August 1956.

***Lepidostoma crypta* Denning, new species**

This species is a member of the *pluvialis* group and is probably closest to *L. rayneri* Ross. Distinguishing characters are in the peculiar configuration of the tenth tergite and the distal portion of the clasper.

MALE.—Length 7 mm. Front wing fulvous, entire costal cell reflexed, the re-

sultant pocket filled with a dense mass of dark brown setae. Antennal scape long, slender, mesal margin thickly haired, no modifications. Head and thorax light brown. Legs yellowish, spurs 2-4-4 with no modifications. Maxillary palpus apparently one segmented, bearing a dense brush of brown hairs distally.

Genitalia as in Fig. 4. Ninth segment annular, caudal margin of ninth sternite produced slightly laterad to form a long narrow invagination. Tenth tergite separated on meson and thus divided into two lateral lobes (Fig. 4A), from lateral aspect distal margin bearing a prominent ventrad directed spine, apicodorsal corner produced into a crown-like series of several minute spines; from dorsal aspect (Fig. 4A) ninth tergite apical lobe obtuse, tenth tergite lateral lobes acute and divergent distally. Clasper slender, long, ventral portion heavily clothed with long, light brown setae, basodorsal lobe digitate; from ventral aspect (Fig. 4B) a slender distally acute lobe is present near apex along mesal margin. Aedeagus tubular, arcuate, bearing a pair of long, closely appressed, very slender acuminate rods.

Holotype male.—SCOTT MOUNTAIN, 19 AIR MILES NORTH OF TRINITY CENTER, TRINITY COUNTY, CALIFORNIA, 5,300 feet, 5 July 1963, C. D. MacNeill and V. B. Whitehead. The type is to be deposited in the collection of the California Academy of Sciences, Golden Gate Park, San Francisco, California.

***Cryptochia excella* Denning, new species**

This new species represents the fourth species in the genus, all the described species are known only from the Western region. *C. excella* represents the most complex species thus far described in the genus, secondary modifications of the male genitalia have proceeded further than in *C. pilosa*, *C. furcata*, and *C. neosa*. This new species may be separated from other members of the genus by the development of the ninth segment, the rudimentary remains of the cercus, the absence of large secondary developments of the aedeagal structure, and several other details.

MALE.—Length 8 mm. Wings blackish, pubescence sparse. Head and thorax varying shades of yellow to dark brown, setation golden, antennae dark brown, legs yellowish.

Genitalia as in Fig. 5. Division between ninth tergum and sternum distinct; ninth sternum narrow, band-like; ninth tergum very large, it merges imperceptibly into a large circular membranous area in which all that remains of the semimembranous cercus is located, the distal portion is fused to the ventral lobe of the tenth tergite which thus appears to be derived from it. Tenth tergite from lateral aspect (Fig. 5) slender and elongate, the ventral portion bearing a dorsal filamentous lobe and a large apically truncate ventral lobe; from dorsal aspect (Fig. 5A) cleft almost to base, each lateral lobe elongate and only slightly divergent. Clasper somewhat crescent-shaped, dorsal lobe bears a long prominent filamentous process, ventral lobe narrowed and curved dorsad; basal portion of claspers fused to ventral margin of aedeagus blades. Aedeagus consists of a pair of heavily sclerotized blades, curved ventrad distally, apex flattened and acute; basal portion developed

ventrad as a sclerotized ovate structure within the eighth sternum; from ventral aspect (Fig. 5B) apices taper suddenly to an acute apex and cross distally; the true aedeagal structure is semimembranous, located between the two blades and is discernible only from ventral or dorsal aspect.

Holotype male.—KING'S CANYON NATIONAL PARK, FRESNO COUNTY, CALIFORNIA, 6,400 feet, 4 June 1963, C. P. Alexander.

The described species of *Cryptochia* may be separated in the following key:

KEY TO SPECIES BASED ON MALES

1. Tenth tergite lateral lobe developed into a long and narrow lobe, filamentous process of clasper long 2
 Tenth tergite lateral lobe long and wide, filamentous process of clasper short 3
2. Ninth tergum large and elongated, aedeagus with a short ventral process near base *excella*
 Ninth tergum normal, not elongated, aedeagus with a massive boot-like structure *pilosa*
3. Ventral process of aedeagus as long as dorsal blades, apex hamate *furcata*
 Ventral process of aedeagus half the length of the dorsal blades, apex truncate *neosa*

The known distribution of the members of *Cryptochia* is as follows:

Cryptochia pilosa (Banks), Washington, Oregon, Idaho, and British Columbia.

Cryptochia neosa Denning, known from the type locality only, Blue Mountains, Grant County, Oregon.

Cryptochia furcata Denning, Montana and British Columbia. A new distributional record is available from Mt. Rainier National Park, Washington, 22 July 1954, Borys Malkin, 1 ♂, 1 ♀.

Cryptochia excella Denning, type locality only, King's Canyon National Park, California.

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